

# SAFETY DATA SHEET

According to US Regulation 29 CFR 1910.1200 (HazCom 2012)

## 1. Identification

**Product identifier:** Boric acid

### Other means of identification

**Product No.:** 0084, 0091, 0092, 0096, 1394, 2549, 2552, 4035, 5168, 7779, 7870, 7871, 7872, 7873, 7905, 7952

### Recommended restrictions

**Recommended use:** For Laboratory, Research or Manufacturing Use.

**Restrictions on use:** Not determined.

### Details of the supplier of the safety data sheet

**Company Name:** Avantor Performance Materials, LLC  
**Address:** 100 Matsonford Rd, Suite 200  
Radnor, PA 19087

**Telephone:** Customer Service: 855-282-6867

**Contact Person:** Product Information Compliance  
**E-mail:** info@avantormaterials.com

### Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada

## 2. Hazard(s) identification

### Hazard Classification

#### Health Hazards

Serious Eye Damage/Eye Irritation	Category 2B
Toxic to reproduction	Category 1B
Specific Target Organ Toxicity - Single Exposure	Category 3 <sup>1</sup>

#### Target Organs

- Narcotic effect., Respiratory tract irritation.

#### Unknown toxicity - Health

Acute toxicity, inhalation, dust or mist	100 %
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### Label Elements

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** Causes eye irritation.  
May damage fertility or the unborn child.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.

**Precautionary Statements**

**Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Avoid breathing dust.

**Response:** IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Storage:** Store locked up. Store in a well-ventilated place. Keep container tightly closed.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):** None.

**3. Composition/information on ingredients**

**Substances**

Chemical Identity	CAS number	Content in percent (%)*
Boric acid	10043-35-3	100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**4. First-aid measures**

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

**Inhalation:** Move to fresh air. Get medical attention if symptoms persist.

**Skin Contact:** Wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Get medical attention if irritation persists after washing.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** Irritating to eyes, respiratory system and skin.  
**Hazards:** None known.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Symptoms may be delayed. Treat symptomatically.

**5. Fire-fighting measures**

**General Fire Hazards:** No unusual fire or explosion hazards noted.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.  
**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.  
**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust.  
**Methods and material for containment and cleaning up:** Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.  
**Notification Procedures:** Inform authorities if large amounts are involved.  
**Environmental Precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

**7. Handling and storage**

**Precautions for safe handling:** Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Avoid contact with skin. Avoid inhalation of dust.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed. Store in a dry place. Store in a well-ventilated place.

**8. Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
Boric acid - Inhalable fraction.	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (02 2012)
	STEL	6 mg/m3	US. ACGIH Threshold Limit Values (02 2012)
Boric acid	AN ESL	1 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (03 2014)
	ST ESL	10 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (03 2014)

**Appropriate Engineering Controls** No data available.

**Individual protection measures, such as personal protective equipment**

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles).

**Skin Protection**

**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Air-purifying respirator with a high efficiency particulate filter.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

**9. Physical and chemical properties**

**Appearance**

**Physical state:** Solid  
**Form:** Granules or powder  
**Color:** White

<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	5.1 (6.18 g/l, 20 °C)
<b>Melting point/freezing point:</b>	170.9 °C
<b>Initial boiling point and boiling range:</b>	300 °C
<b>Flash Point:</b>	Not applicable
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	No data available.
<b>Density:</b>	1.43 g/ml (20 °C)
<b>Relative density:</b>	1.43 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	50 g/l (25 °C)
<b>Solubility (other):</b>	methanol: 173.9 g/l (25 °C) ethanol: 94.4 g/l (25 °C)
<b>Partition coefficient (n-octanol/water):</b>	0.175
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	61.84 g/mol (BH3O3)

## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Water, moisture.
<b>Incompatible Materials:</b>	Strong oxidizing agents. Alkalies. Potassium
<b>Hazardous Decomposition Products:</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation:</b>	Dust may irritate respiratory system.
<b>Skin Contact:</b>	Causes mild skin irritation.
<b>Eye contact:</b>	Causes eye irritation.
<b>Ingestion:</b>	May be harmful if swallowed.

## Information on toxicological effects

### Acute toxicity (list all possible routes of exposure)

#### Oral

**Product:** LD 50 (Rat): 2,660 - 4,080 mg/kg

#### Dermal

**Product:** LD 50 (Rabbit) > 2,000 mg/kg

#### Inhalation

**Product:** LC 50 (Rat, 4 h) > 0.16 mg/l

### Repeated dose toxicity

**Product:** No data available.

### Skin Corrosion/Irritation

**Product:** Causes mild skin irritation.

### Serious Eye Damage/Eye Irritation

**Product:** Irritating to eyes.

### Respiratory or Skin Sensitization

**Product:** Not a skin sensitizer.

### Carcinogenicity

**Product:** This substance has no evidence of carcinogenic properties.

### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

### US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

### Germ Cell Mutagenicity

#### In vitro

**Product:** No mutagenic components identified

#### In vivo

**Product:** No mutagenic components identified

### Reproductive toxicity

**Product:** May damage fertility or the unborn child.

### Specific Target Organ Toxicity - Single Exposure

**Product:** Respiratory tract irritation. May cause drowsiness or dizziness.

### Specific Target Organ Toxicity - Repeated Exposure

**Product:** None known.

#### Target Organs

Specific Target Organ Toxicity - Single Exposure: Narcotic effect., Respiratory tract irritation.

<b>Aspiration Hazard</b>	
<b>Product:</b>	Not classified
<b>Other effects:</b>	None known.

## 12. Ecological information

### Ecotoxicity:

#### Acute hazards to the aquatic environment:

##### Fish

**Product:** LC 50 (Colorado squawfish (*Ptychocheilus lucius*), 96 h): 216 - 360 mg/l

##### Aquatic Invertebrates

**Product:** EC 50 (Water flea (*Daphnia magna*), 24 h): 264,300 - 496,700 mg/l  
LC 50 (Opossum shrimp (*Americamysis bahia*), 96 h): 52.8 - 148 mg/l

#### Chronic hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Aquatic Invertebrates

**Product:** No data available.

##### Toxicity to Aquatic Plants

**Product:** LC 50 (Waterweed (*Elodea canadensis*), 21 d): 5 mg/l

### Persistence and Degradability

#### Biodegradation

**Product:** The product is not readily biodegradable.

#### BOD/COD Ratio

**Product:** No data available.

### Bioaccumulative potential

#### Bioconcentration Factor (BCF)

**Product:** No data available on bioaccumulation.

### Partition Coefficient n-octanol / water (log Kow)

**Product:** Log Kow: 0.175

**Mobility in soil:** No data available.

**Other adverse effects:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 13. Disposal considerations

**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

Not regulated.

### IMDG

Not regulated.

### IATA

Not regulated.

## 15. Regulatory information

### US Federal Regulations

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

#### CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

##### Hazard categories

Serious Eye Damage/Eye Irritation

Toxic to reproduction

Specific Target Organ Toxicity - Single Exposure

##### SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

##### SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

##### SARA 311/312 Hazardous Chemical

###### Chemical Identity

Boric acid

###### Threshold Planning Quantity

10000 lbs.

##### SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

#### Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):

None present or none present in regulated quantities.

### US State Regulations

#### US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

#### US. New Jersey Worker and Community Right-to-Know Act

##### Chemical Identity

Boric acid



**US. Massachusetts RTK - Substance List**

No ingredient regulated by MA Right-to-Know Law present.

**US. Pennsylvania RTK - Hazardous Substances**

No ingredient regulated by PA Right-to-Know Law present.

**US. Rhode Island RTK**

No ingredient regulated by RI Right-to-Know Law present.

**International regulations**

**Montreal protocol**

Not applicable

**Stockholm convention**

Not applicable

**Rotterdam convention**

Not applicable

**Kyoto protocol**

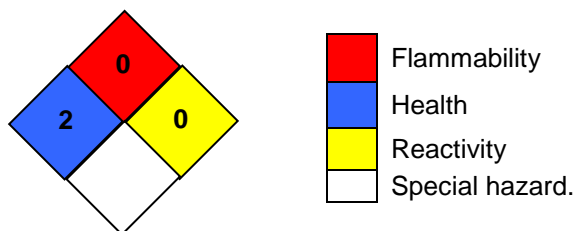
Not applicable

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory

**16. Other information, including date of preparation or last revision**

**NFPA Hazard ID**



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

**Issue Date:** 11-29-2018

**Revision Information:** Not relevant.

**Version #:** 1.4

**Source of information:** Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

**Further Information:** No data available.

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